

Discontinue

Electronic pressure switch (pressure switch)

PPS2 Series

Due to semiconductor pressure sensor and 8 bits microcomputer, air pressure is displayed with digital display.



Overview

This product is high reliable and high precision pressure switch developed for pneumatic and vacuum systems. Different from conventional mechanical mechanism, configured with semiconductor pressure sensor and 8 bits one chip microcomputer.

Precisely detected pneumatic / vacuum, the result is displayed with digital display. Switch output is 4 points to allow wide applications.

Features

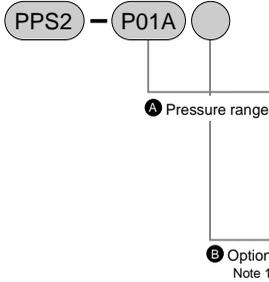
- This can be used in adverse environment IP66 is available as option for front control panel of main body.
Also, due to water proof IP67 in pressure sensor section of sensor separated type, the product can be used where water contacts to the product. Connect a water proof pipe to atmospheric pressure inlet (M3 X 0.5) for atmospheric release, while preventing water from entering.
- Small and compact design
DIN standards size □ 48mm, small and compact.
- Wide pressure range
New positive / negative pressure (-0.1 to 0.5MPa) types are added, so wide pressure range is available.
- LED display
Easy confirmation of pressure and set value in dark place.
- Independent 4 points of switch output
2 types of switching (window and hysteresis operations) can be set up to 4 points. Switch output is not polarized. NO (normally open) and NC (normally closed) types are available.
- Easy installation / adjustment
- Simple zero point adjustment by front key operation
- Certain wiring by gland connection
- With analog output DC0 to 5V

Specifications

Descriptions	PPS2-P01A(kPa)	PPS2-P10P(MPa)	PPS2-V01A(kPa)	PPS2-V01A-A(kPa)	PPS2-VPP(MPa)
Pressure range	0 to 100.0kPa	0 to 1.000MPa	0 to -101.3kPa	0 to 200kPa(abs)	-0.101 to 0.5MPa
Min. display digit	0.1kPa	0.001MPa	0.1kPa		0.001MPa
Pressure sensitive element	Carrier diffusion type semiconductor strain gauge				
Applicable fluid	Air / non-corrosive gas				
Withstanding pressure	150kPa	1.5MPa	150kPa	300kPa(abs)	0.75MPa
Display	3 1/2 digits LED display / red / height 8mm				
Display sampling rate	Approx. 4 cycle/sec.				
Power supply	DC11 to 26V, 100mA (ripple ratio 1% or less)				
Set value holding	Marinating for 10 years without energizing (E ² PROM)				
Display accuracy	± 1%F.S. ± 1dig (at 25°C)				
Temperature characteristics	Zero shift: ± 0.1%F.S. / °C Span shift: ± 0.1%F.S. / °C				
Switch rated	Output No: 4 points		Current: Max. 100mA		
	Output type: Non-polar transistor		Internal voltage drop: 3V or less		
	Withstanding pressure: Max. 30V				
Switch response time	200Hz and over (5msec. or less)				
Analog output	Output voltage: DC0 to 5V (0 to F.S.) Temperature characteristics: ± 0.1%F.S./°C Accuracy: ± 2%F.S (at 25°C) Load impedance: 1KΩ and over				
Special function	<ul style="list-style-type: none"> • Zero point adjustment (excluding absolute pressure type) • Switch output load phase fault protection and error display • Changing switch output mode of NO (normally open) and NC (normally closed) possible. 				
Working conditions	Ambient temperature range	0 to 50 °C			
	Storage temperature range	-20 to 60 °C			
	Working humidity range	0 to 85%R.H.			
	Water proof	None (Optional water resistant front operating section (IP66) is available.)			
Mechanical shock proof	Mechanical vibration proof	10 to 55Hz compound amplitude 1.5mm, 2 hours per X, Y, Z directions			
	Mechanical shock proof	100m/s ² (approx. 10G) per X, Y, Z directions			
Port size	Rc1/8 (PT1/8 female thread)				
Mass	Approx. 180g (sensor body)				

How to order

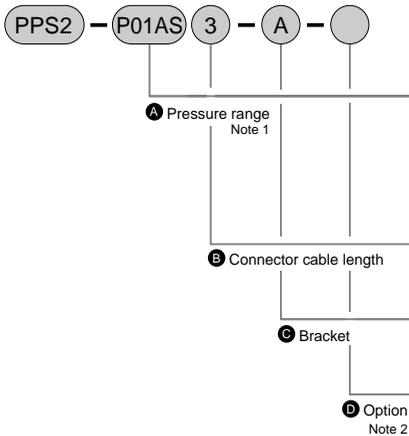
• Sensor / body integrated type



Symbol	Descriptions
A Pressure range	
P01A	0 to 100.0kPa
P10P	0 to 1.000MPa
V01A	0 to -101.3kPa
V01A-A	0 to 200kPa(abs)
VPP	-0.101 to 0.5MPa
B Option	
Blank	No water proof
W	Water proof (IP66)

Note 1: Main body front control section only.

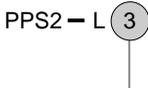
• Sensor / body separation type



Symbol	Descriptions
A Pressure range	
P01AS	0 to 100.0kPa
P10PS	0 to 1.000MPa
V01AS	0 to -101.3kPa
V01AS-A	0 to 200kPa(abs)
VPPS	-0.101 to 0.5MPa
B Connector cable length	
3	3m
5	5m
C Bracket	
A	Bracket A (for horizontal installation)
B	Bracket B (for vertical installation)
D Option	
Blank	No water proof
W	Water proof (IP66)

Note 1: "S" shows a sensor - body separation type.
Note 2: Main body front control section only. IP67 for sensor section.

Model no. of connector cable only



Symbol	Descriptions
Connector cable length	
3	3m
5	5m

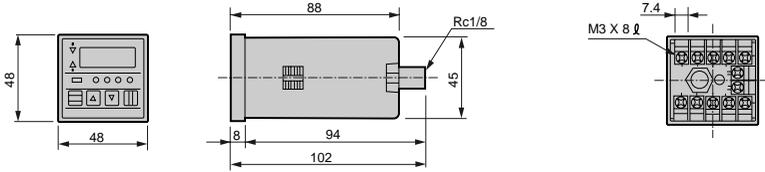
Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Automatic drain other
F.R.L (Module)
F.R.L (Separate)
Small F.R.
Precise R.
Electro pneumatic R.
Auxiliary
Flow control valve
Silencer
Check valve / others
Joint / tube
Vacuum F.
Vacuum R.
Vacuum generator
Vacuum auxiliary / pad
Mechanical pressure SW
Electronic pressure SW
Electronic dif. pres. SW
Sealing / close contact conf. SW
Pressure SW for coolant
Flow sensor for air
Total air system

Water cooling refrigerator
Flow sensor for water

Pressure sensor
Electronic pressure switch

Dimensions

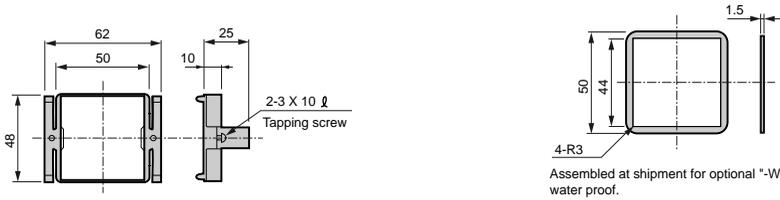
- Sensor / body integrated type



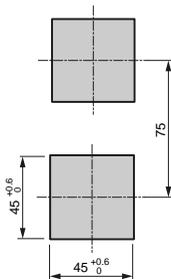
- Panel mount dimension (sensor - body integrated type/sensor - body separation type common)

[Panel mount fixture]

[Gasket for panel mount]



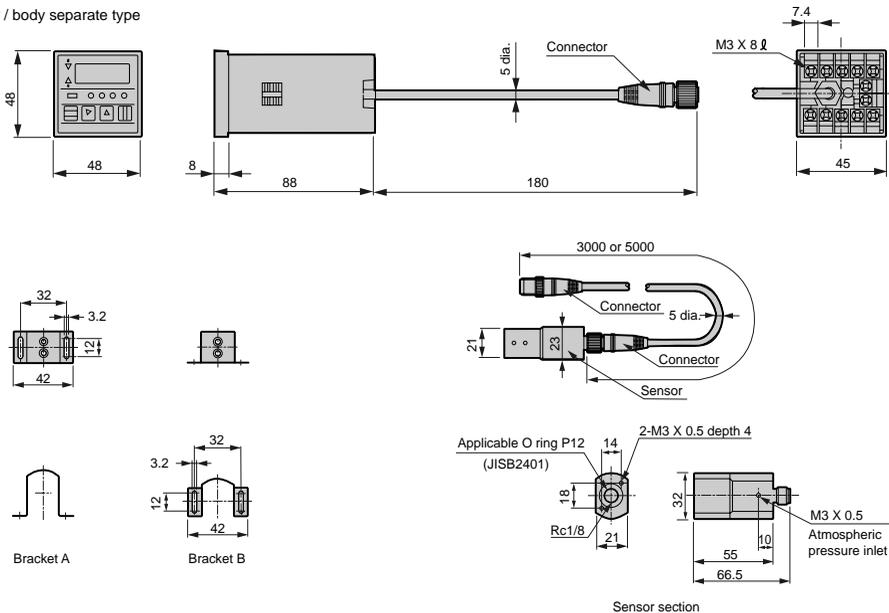
[Panel cut dimension]



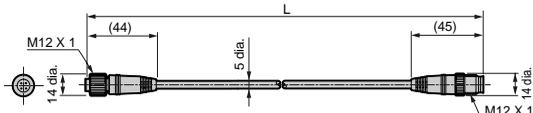
Refer to detailed precautions of PPS2 series (Page 860) for cautions for wiring methods.

Dimensions

• Sensor / body separate type



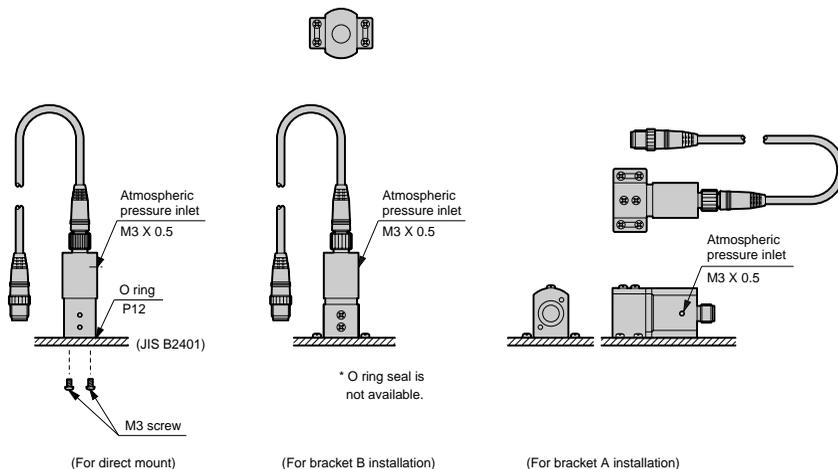
• Connector cable (PPS2-L3 and PPS2-L5)



Pin No	Signal
1	+ 9V
2	Shield
3	GND
4	Sensor output

1 PPS2-L	
*1. Connector cable	Dimension
3	3000 + 100 0
5	5000 + 100 0

• Sensor installation attitude



Refer to detailed precautions of PPS2 series (Page 860) for cautions for wiring methods.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Automatic drain other
F.R.L (Module)
F.R.L (Separate)
Small F.R.
Precise R.
Electro pneumatic R.
Auxiliary
Flow control valve
Silencer
Check valve / others
Joint / tube
Vacuum F.
Vacuum R.
Vacuum generator
Vacuum auxiliary / pad
Mechanical pressure SW
Electronic pressure SW
Electronic dif. pres. SW
Seating / close contact conf. SW
Pressure SW for coolant
Flow sensor for air
Total air system
Water cooling refrigerator
Flow sensor for water
Pressure sensor
Electronic pressure switch

Discontinue

Electronic pressure controller (pressure controller) PPS2 Series

PPS2 Series

Directive signal output function to component (electro pneumatic / electronic regulator, proportional valve) integrated.



Specifications

Overview

This product, combined with electro-pneumatic proportional control components, is a pressure controller to control and set pressure digitally. Allowing 4 points of pressure setting, switch output is provided per set pressure to check feedback information. High precision and reliability in control are achieved.

Features

- This can be used in adverse environment IP66 is available only for front control panel of main body as option. Pressure sensor section of sensor separation type is water proof IP67, so the product can be used where water contacts to the product. Connect a water proof pipe to atmospheric pressure inlet (M3 X 0.5) for atmospheric release to prevent water from entering.
- Small and compact design
DIN standards size □48mm, small and compact.
- LED display
Easily checking set value in dark place.
- Easily connected to peripheral components
Peripheral components can be connected directly.
(EV series, ER100 / 300 series and APC (3AP2))
- Easy setting of directive output
Only setting the required pressure value, directive signals can be outputted. Compensation is easily done on the front panel.
- Simple zero point adjustment by front key operation
- Certain wiring by gland connection

Descriptions	PPS2-	PPS2-	PPS2-	PPS2-	PPS2-	PPS2-	PPS2-	PPS2-	
	R150P	R170P	R310A	R350P	R380P	APCP	EV01A	EV05P	EV25P
Display pressure range	0 to 1.000 MPa		0 to 100.0 kPa	0 to 1.000 MPa			0 to 100.0 kPa	0 to 1.000 MPa	
Min. display digit	0.001MPa		0.1kPa	0.001MPa			0.1kPa	0.001MPa	
Set pressure range	0.01 to 0.5 MPa	0.01 to 0.7 MPa	0 to 100.0 kPa	0 to 0.5 MPa	0 to 0.8 MPa	0.05 to 0.6 MPa	0 to 100.0 kPa	0 to 0.5 MPa	
Pressure sensitive element	Carrier diffusion type semiconductor strain gauge								
Applicable fluid	Air / non-corrosive gas								
Withstanding pressure	1.5MPa		150kPa	1.5MPa			150kPa	1.5MPa	
Display	3 1/2 digits LED display / red / height 8mm								
Display sampling rate	Approx. 4 cycle/sec.								
Power supply	DC24V ± 10%, 100mA (ripple ratio 1% or less)								
Set value holding	Maintained for 10 years without energizing (E ² PROM provided)								
Display accuracy	± 1%F.S. ± 1dig (at 25°C)								
Temperature characteristics	Zero shift		± 0.1%F.S. / °C						
	Span shift		± 0.1%F.S. / °C						
Switch rated	Output No		: 4 points						
	Output type		: NPN open collector output						
	Withstanding pressure		: Max. 30V						
	Current		: Max. 100mA						
	Internal voltage drop		: 3V or less						
	* If set pressure ± 0.01MPa is reached (± 1.0kPa. for R310, EV01), switch output turns ON								
Switch response time	200Hz and over (5msec. or less)								
Input specifications (Set pressure selection input)	Input No		: 4 points						
	Input method		: No-voltage contact or NPN open collector input (negative logic)						
	Min. input pulse amplitude		: 50msec						
Component directive output	Output voltage		: DC0 to 10V (0 to set pressure F.S.)						
	Temperature characteristics		: ± 0.1%F.S. / °C						
Special function	• Zero point adjustment								
	• Switch output load phase fault protection and error display								
	• Changing switch output mode of NO (normally open) and NC (normally closed) possible								
Working conditions	Ambient temperature range		0 to 50°C						
	Storage temperature range		-20 to 60°C						
	Working humidity range		0 to 85%R.H.						
	Water proof		None (Optional water resistant front operating section (IP66) is available.)						
Mechanical vibration proof		10 to 55Hz compound amplitude 1.5mm, 2 hours per X, Y, Z directions							
Mechanical shock proof		100m/S ² (approx. 10G) X, Y, Z each directions							
Port size	Rc1/8 (PT1/8 female thread)								
Mass	Approx. 180g (sensor body)								

How to order

- Sensor / body integrated type



A Model no.

B Option
Note 2

Symbol	Descriptions
A Model no.	
R150P	ER150 (MPa)
R170P	ER170 (MPa)
R310A	ER310 (kPa)
R350P	ER350 (MPa)
R380P	ER380 (MPa)
APCP	APC (3AP2) (MPa)
EV01A	EV0100 (kPa)
EV05P	EV0500 (MPa)
EV25P	EV2500 (MPa)
B Option	
Blank	No water proof
W	Water proof (IP66)

Note 1: A pressure switch which input signal voltage range is 0 to 10 V should be used.

Note 2: Main body front control section only.

- Sensor / body separation type



A Model no.

B Connector cable length

C Bracket

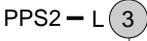
D Option
Note 2

Symbol	Descriptions
A Model no.	
R150PS	ER150 (MPa)
R170PS	ER170 (MPa)
R310AS	ER310 (kPa)
R350PS	ER350 (MPa)
R380PS	ER380 (MPa)
APCPS	APC (3AP2) (MPa)
EV01AS	EV0100 (kPa)
EV05PS	EV0500 (MPa)
EV25PS	EV2500 (MPa)
B Connector cable length	
3	3m
5	5m
C Bracket	
A	Bracket A (for horizontal installation)
B	Bracket B (for vertical installation)
D Option	
Blank	No water proof
W	Water proof (IP66)

Note 1: A pressure switch which input signal voltage range is 0 to 10 V should be used.

Note 2: Main body front control section only. IP67 for sensor section.

Model no. of connector cable only



Symbol	Descriptions
Connector cable length	
3	3m
5	5m

Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer

Air filter

Automatic drain other

F.R.L (Module)

F.R.L (Separate)

Small F.R.

Precise R.

Electro pneumatic R.

Auxiliary

Flow control valve

Silencer

Check valve / others

Joint / tube

Vacuum F.

Vacuum R.

Vacuum generator

Vacuum auxiliary / pad

Mechanical pressure SW

Electronic pressure SW

Electronic dif. pres. SW

Sealing / close contact conf. SW

Pressure SW for coolant

Flow sensor for air

Total air system

Water cooling refrigerator

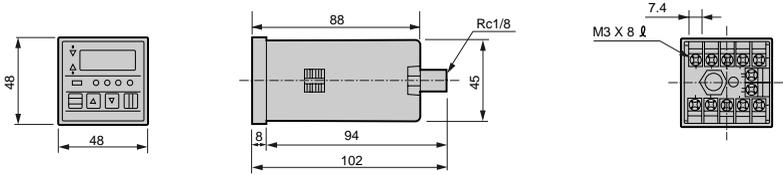
Flow sensor for water

Pressure sensor

Electronic pressure switch

Dimensions

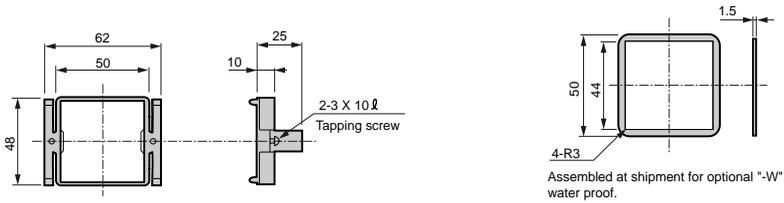
- Sensor / body integrated type



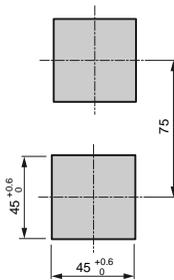
- Panel mount dimension (sensor-body integrated type/sensor-body separate type common)

[Panel mount fixture]

[Gasket for panel mount]



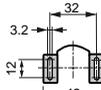
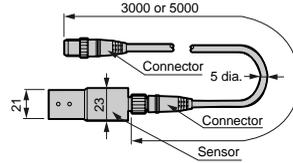
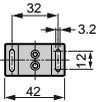
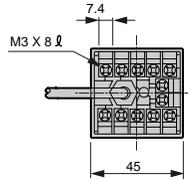
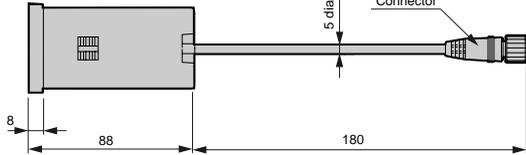
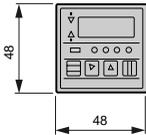
[Panel cut dimension]



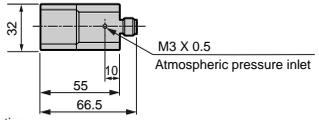
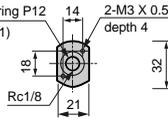
Refer to detailed precautions of PPS2 series (Page 860) for cautions for wiring methods.

Dimensions

- Sensor / body separate type

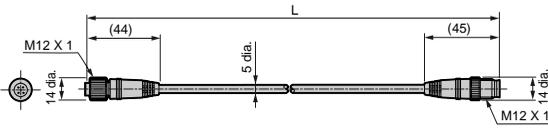


Applicable O ring P12 (JISB2401)



Sensor section

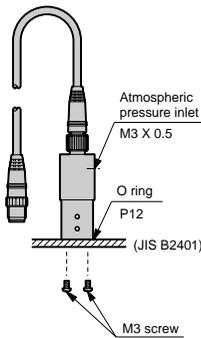
- Connector cable (PPS2-L3 and PPS2-L5)



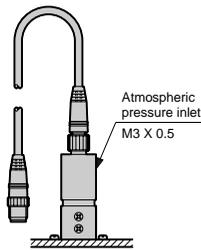
Pin No	Signal
1	+ 9V
2	Shield
3	GND
4	Sensor output

1 PPS2-L	
*1. Connector cable	Dimension
3	+ 100
	0
5	+ 100
	0

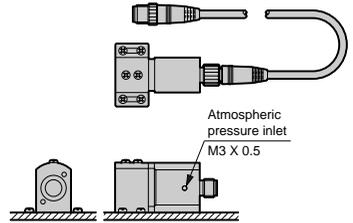
- Sensor installation attitude



(For direct mount)



(For bracket B installation)



(For bracket A installation)



Refer to detailed precautions of PPS2 series (Page 860) for cautions for wiring methods.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Automatic drain other
F.R.L (Module)
F.R.L (Separate)
Small F.R.
Precise R.
Electro pneumatic R.
Auxiliary
Flow control valve
Silencer
Check valve / others
Joint / tube
Vacuum F.
Vacuum R.
Vacuum generator
Vacuum auxiliary pad
Mechanical pressure SW
Electronic pressure SW
Electronic dif. pres. SW
Seating / close contact conf. SW
Pressure SW for coolant
Flow sensor for air
Total air system
Water cooling refrigerator
Flow sensor for water
Pressure sensor
Electronic pressure switch

Discontinue

Pneumatic components (Electronic pressure switch and sensor)



Safety Precautions

Read this before starting use.

Please refer to Intro 43 for general details on the pneumatic components, and to "▲Safety Precautions" in this section for detailed cautions pertaining to each series.



Design & Selection

1 Response is affected by working pressure and load volume. If repeatability with stable responsiveness is required, install a regulator in the proceeding stage.

2 Take the following measures to prevent malfunction caused by noise:

- Insert a line filter in the AC power supply line.
- Use a surge suppressor, such as a CR or diode on the inductive load (solenoid valve, relay, etc.), and remove noise where generated.
- Separate wiring to proportional control systems from strong magnetic fields.
- Connect wiring to proportional control systems with a shield wire.
- Ground the shield wire on the power supply side.

3 When releasing secondary control pressure, such as an air blow, into the atmosphere, pressure could fluctuate depending on piping and blow conditions. Test under actual working conditions, or consult with CKD before using this method.

4 When selecting a dryer, air filter, oil mist filter, or regulator, select a device with a flow rate higher than that used by the proportional control systems device.



CAUTION

Installation & Adjustment

1 Avoid using this product where subjected to direct sunlight, water, oil, etc.

2 Sufficiently flush air pipes before connecting to the proportional control systems device. Check that sealing tape is not caught when piping.

3 When connecting pipes, wrap sealing tape in the opposite direction from threads starting 2 mm inside from the end of piping threads.

- If sealing tape protrudes from pipe threads, it could be cut when screwed in. This could cause the tape to enter the solenoid valve and lead to faults.

4 Correct pressure control is not possible if the exhaust port is plugged. Release this port into the atmosphere.

5 Tighten with the appropriate torque when connecting pipes.

- Pipes must be connected with the appropriate torque to prevent air leakages and screw damage.
- First tighten the screw by hand to prevent damage to screw threads, then use a tool.

Set screw	Tightening torque N·m
M3	0.3 to 0.6
M5	1 to 1.5
Rc1/8	3 to 5



CAUTION

During use & Maintenance

1 Disassembling the regulator could result in problems. Operation after disassembly cannot be guaranteed.

Refrigerating type dryer

Desiccant type dryer
High polymer membrane dryer

Air filter

Automatic drain other

F.R.L. (Module)

F.R.L. (Separate)

Small F.R.

Precise R.

Electro pneumatic R.

Auxiliary

Flow control valve

Silencer

Check valve / others

Joint / tube

Vacuum F.

Vacuum R.

Vacuum generator

Vacuum auxiliary / pad

Mechanical pressure SW

Electronic pressure SW

Electronic dif. pres. SW

Sealing / close contact conf. SW

Pressure SW for coolant

Flow sensor for air

Total air system

Water cooling refrigerator

Flow sensor for water

Pressure sensor

Electronic pressure switch



Discontinue

Pneumatic components (Electronic pressure switch and sensor)

Safety Precautions

Read this before starting use.

Please refer to Intro 43 for general details on the pneumatic components, and to "▲Safety Precautions" in this section for detailed cautions pertaining to each series.



WARNING

Design & Selection

1 Use within the specified range.

- Use for applications, or at load currents, voltages, temperatures, impacts or sites excluded from the specifications could result in damage or malfunctions.

2 Never use this product for oxygen, corrosive or flammable gases or poisonous fluids.

3 Never use this product in an explosive gas environment.

- The pressure switch does not have an explosive-proof structure. Never use in an explosive gas environment as explosions or fires could result.

4 Avoid installing this product in a sealed control box or indoors.

- If the fluid should leak due to any trouble, the pressure in the sealed chamber could change and recreate a hazardous state. Use this product in a control box with a safety valve to limit inner pressure or indoors where there is little difference in indoor and outdoor pressure.



CAUTION

Design & Selection

1 Use of fluids other than applicable fluids

- The customer is responsible for checking safety and taking appropriate means for using noncorrosive and nonflammable gases.
- When using this product for compressed air containing water or oil, use the PPD (3)-S (stainless steel diaphragm sensor specifications) with increased corrosion resistance.

2 Take care when using this product to check vacuum suction.

- When applying positive pressure for vacuum break onto the product, check that it does not exceed the specified withstand pressure.

3 Working environment

- Avoid using this product where vibration or impact exceeding 98 m/s² could be applied.
- Check the temperature of fluid being measured and the environmental temperature in piping.
- When using a type that does not have the corresponding protective structure, do not use for applications in which water or oil could be applied.

4 Determine the setting taking error caused by accuracy and temperature characteristics into consideration.

5 Take care when using this product for an interlock circuit.

- When using the pressure switch for an interlock signal requiring high reliability, provide a double interlock by installing a mechanical protection function or a switch (sensor) other than a pressure switch as a guard if problems occur. Regularly inspect and verify that the double interlock functions correctly.

[Recommended values]

Model	Protective structure
PPD/PPD-S	IP40
PPE/PPD3 (-S)	IP65
PPS2 front operation section (option)	IP66
PPD-A/PPS2 sensor's separate sensor section only	IP67



WARNING

Installation & Adjustment

Connect this product correctly.

- Incorrect connection could result in problems with this product or fatal problems in peripheral devices.

2 A DC power supply that cannot be insulated from the AC primary side could result in product or power damage, and may result in electric shock. Do not use this type of DC power supply.

Discontinue

Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Automatic drain other
F.R.L (Module)
F.R.L (Separate)
Small F.R.
Precise R.
Electro pneumatic R.
Auxiliary
Flow control valve
Silencer
Check valve / others
Joint / tube
Vacuum F.
Vacuum R.
Vacuum generator
Vacuum auxiliary / pad
Mechanical pressure SW
Electronic pressure SW
Electronic dif. pres. SW
Sealing / close contact conf. SW
Pressure SW for coolant
Flow sensor for air
Total air system
Water cooling refrigerator
Flow sensor for water
Pressure sensor / Electronic pressure switch



CAUTION

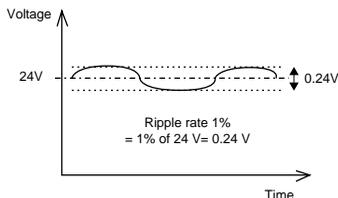
Installation & Adjustment

1 Check the protection of the main unit and lead.

- Do not bump or drop the main unit, or apply excessive bending or tensile strength to the lead because the lead could be disconnected.
- Connect and wire bending-resistant material, such as robot wire material, for the movable sections.

2 Wiring

- Turn power OFF before wiring this product. Discharge static electricity from personnel or tools before and during work.
- Use a stabilized noise-free power supply with a ripple voltage of 1% or less.
- Install the product and wiring as far away as possible from sources of noise such as power distribution wires. Take separate measures against surge generated from inductive loads that enters the power wire.
- Do not start the control unit, machines, or equipment immediately after wiring. Unpredicted signals could be output due to inadvertently set values. Conduct a power ON test with the control unit, machine, and equipment stopped, and set required switches.

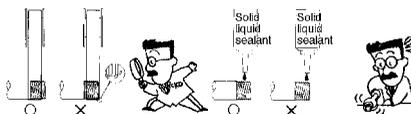


3 Stop the machine and equipment and confirm safety before setting switch outputs.

4 Operate keys manually. Sharp instruments, such as knives or screwdriver, contacting plastic film on the operation section could damage film and compromise its protective functions.

5 Piping

- Use the recommended tube for the push-in joint, and connect to the assembled push-in joint after flushing.
 - Recommended tube: 6 mm outer diameter CKD F-1506, U-9506, etc.
- Wind sealing tape or apply a sealant on the threaded joint, and screw in while taking care not to tighten excessively. Catch a wrench on the metal section when tightening. Only the PPE has a resin section.
- When winding sealing tape, wind from 2 mm and over inward from the end of threads on the pipe.
 - If sealing tape protrudes from the end of pipe threads, it could be cut when the joint is screwed in and cut pieces could get inside and cause problems.



- Limit the pipe length to 1 m, and check that excessive tensile strength or impact is not applied. If the tube is long, unpredicted tensile strength could be generated from tube weight, and by vibration and impact. Fix or relay the tube to the machine or equipment midway so that tube weight is not applied.

6 Avoid connecting the output for a relay contact, operation switch, or other component output in parallel with the PC to the product's output, or short-circuit the input terminal of the PC to which this product is connected with the power supply cable's minus side to test the input device. This product's output circuit could be damaged.

7 Some pressure measurement ports have a push-in joint. Check the right angle of the tube's side, and check that the end of the tube is not damaged, dented, or dirty. Note that only air and compressed air can be measured. Check that water and dirt do not get into the tube when piping.



Discontinue

Pneumatic components (Electronic pressure switch and sensor)

Safety Precautions

Read this before starting use.

Please refer to Intro 43 for general details on the pneumatic components, and to "▲Safety Precautions" in this section for detailed cautions pertaining to each series.



WARNING

During use & Maintenance

1 Avoid overcurrent.

* If overcurrent flows to the pressure switch because of a load short-circuit, etc., the pressure switch will be damaged and could also ignite. Provide an overcurrent protection circuit, such as a fuse, for the output wire and power cable as needed.



CAUTION

During use & Maintenance

1 This product must not be disassembled.

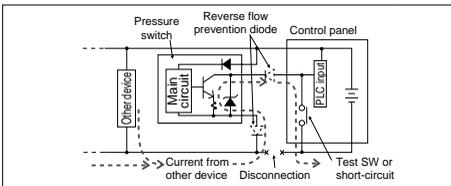
* The product could be damaged or performance compromised if this product is disassembled. CKD does not guarantee performance after disassembly. Remove the entire installation section (pressurized port section) when replacing or moving this product.

2 Stop the machine and equipment, and confirm safety before operating the product.

3 With PPD/PPS2, pressure is detected 200 times per second, but the display is updated 4 times a second, and cannot track fast pressure changes. The switch could therefore start operating at quickly changing pressure even when the display does not indicate the switch setting.

4 This case is made of resin. Do not use solvent, alcohol, or detergent in cleaning, or resin could absorb it. Wipe off dirt with a rag soaked in a diluted neutral detergent solution and wrung out well.

5 Pay attention to reverse currents caused by disconnected wires and wiring resistance. When other devices, including pressure switches, are connected to the same power supply as the pressure switch, and the output cable and power cable's minus side is disconnected to check operation of the input device from the control panel, reverse current could flow to the pressure switch's output circuit and cause damage.

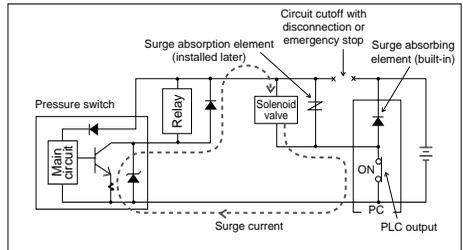


Take the following measures to prevent damage caused by reverse current:

- (1) Avoid centralizing current at the power cable, especially the minus side power cable, and use as thick a wire as possible.
- (2) Limit the number of devices connected to the same power supply as the pressure switch.

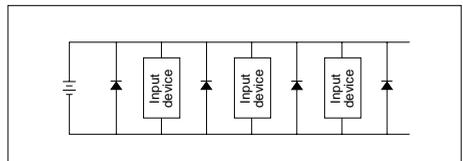
- (3) Insert a diode in serial with the pressure switch's output cable to prevent reversal of current.
- (4) Insert a diode serially with the pressure switch's power cable minus side to prevent reversal of current.

6 Pay attention to leading of surge current
When pressure switch power is shared with an inductive load that generates surges, such as a solenoid valve or relay, if the circuit is cut off while the inductive load is functioning, surge current could enter the output circuit and cause damage depending on where the surge absorption element is installed.



Take the following measures to prevent damage from surge current that is led in:

- (1) Separate the power supply for the output system comprising the inductive load, such as the solenoid valve and relay, and the input system, such as the pressure switch.
- (2) If separate power supplies cannot be used, directly install a surge absorption element for all inductive loads. Remember that the surge absorption element connected to the PLC, etc., protects only that device.
- (3) Connect a surge absorption element to the following places on the power wiring as shown below as a measure against disconnections in unspecified areas:



When the devices are connected to a connector, the output circuit could be damaged by the above phenomenon if the connector is disconnected while power is ON. Turn power OFF before connecting or disconnecting the connector.



Discontinue

Pneumatic components (Electronic pressure switch and sensor)

Safety Precautions

Read this before starting use.

Please refer to Intro 43 for general details on the pneumatic components, and to "▲Safety Precautions" in this section for detailed cautions pertaining to each series.

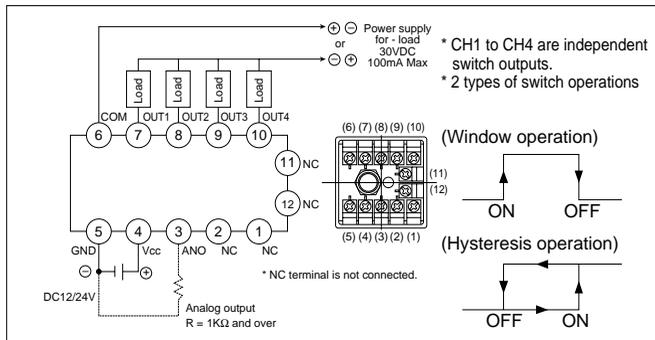
Electronic pressure switch PPS2 Series



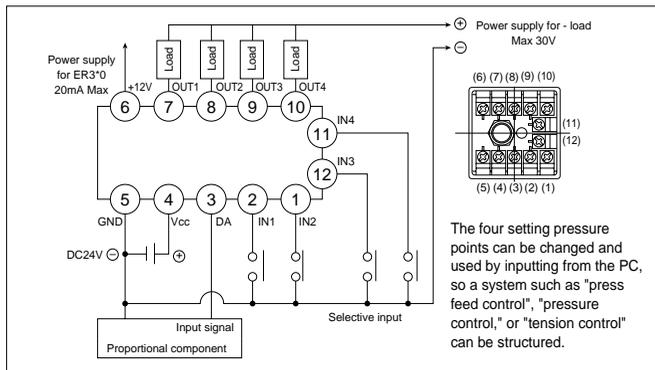
CAUTION

Design & Selection

PPS2 switch



PPS2 controller



1 The cable can be extended by adding connectors to a maximum length within 20 m.

2 Pipe the sensor separated type's introduction port for atmospheric pressure (M3 x 0.5) or else the sensor's protective structure (IP67) is not effective.



CAUTION

Installation & Adjustment

1 The sensor separate body and sensor are adjusted as a set. Do not use parts with different lot numbers.

2 Do not tighten terminal screws with excessive torque. Tightening torque: 0.5 to 0.7 Nm

3 Switch

- Analog output load impedance must be 1 kΩ and over.
- The zero point of the absolute pressure type cannot be adjusted.

4 Controller

- Use a Proportional Control Systems device with a signal input voltage between 0 and 10 V.
- Do not connect a load other than the Proportional Control Systems device to the Proportional Control Systems device command output terminal.
- Do not issue a voltage signal to pressure selection input. Use a relay contact or an NPN transistor open collector. Input these by short-circuiting the "GND" terminal and "IN1 to 4" terminals. Issue the input signal for 50 ms and over. Input to several selection signals is not accepted.